

## Title (en)

Method for determining the degree of saturation of solid ammonia storage materials in containers

## Title (de)

Verfahren zur Bestimmung des Sättigungsgrads von Materialien zur Aufbewahrung von festem Ammoniak in Behältern

## Title (fr)

Procédé pour déterminer le degré de saturation de matériaux de stockage d'ammoniac solide dans des conteneurs

## Publication

**EP 2361883 A1 20110831 (EN)**

## Application

**EP 10001955 A 20100225**

## Priority

EP 10001955 A 20100225

## Abstract (en)

A method is provided for estimating the degree of saturation ( S ) of a reversible solid ammonia storage material (3) in a storage unit (1). The storage unit (1) is equipped with a heater (2) to release ammonia and a connected tube (4) for ammonia flow. The initial temperature ( T INIT ) is measured with a sensor (9) in or around the storage unit (1) before any heating is initiated. Heating is initiated while recording the active time of heating (t) or the amount of energy (Q) released by the heater. The desorption pressure created by solid storage material in the storage unit (1) is measured via a pressure sensor (8) in fluid communication with the storage unit (1). The time (t TARGET ), or the heat (Q TARGET ) where the pressure reaches a certain target pressure (P TARGET ) is recorded. The values of the target-pressure time (t TARGET ), or the target-pressure heat (Q TARGET ), and the initial temperature (T INIT ) are used to compute an approximate degree of saturation ( S ).

## IPC 8 full level

**C01C 1/00** (2006.01); **F01N 3/20** (2006.01)

## CPC (source: EP US)

**B01D 53/9495** (2013.01 - US); **C01C 1/006** (2013.01 - EP US); **F01N 3/208** (2013.01 - EP US); **G01N 7/16** (2013.01 - US); **F01N 2610/02** (2013.01 - EP US); **F01N 2610/06** (2013.01 - EP US); **F01N 2610/10** (2013.01 - EP US); **F01N 2610/1406** (2013.01 - EP US); **F01N 2900/0408** (2013.01 - EP US); **F01N 2900/1808** (2013.01 - EP US); **F01N 2900/1811** (2013.01 - EP US); **Y02A 50/20** (2017.12 - EP US); **Y02T 10/12** (2013.01 - EP US)

## Citation (applicant)

- WO 2006012903 A2 20060209 - AMMINEX AS [DK], et al
- WO 2008077652 A2 20080703 - AMMINEX AS [DK], et al
- WO 2009156204 A1 20091230 - BOSCH GMBH ROBERT [DE], et al

## Citation (search report)

- [AD] WO 2006012903 A2 20060209 - AMMINEX AS [DK], et al
- [A] DE 102006061370 A1 20080626 - AMMINEX AS [DK]
- [A] DE 102008002612 A1 20091231 - BOSCH GMBH ROBERT [DE]
- [A] EP 1992397 A1 20081119 - AMMINEX AS [DK]
- [X] JOHANNESSEN T ET AL: "Ammonia Storage and Delivery Systems for Automotive NOx Aftertreatment", SAE TECHNICAL PAPER SERIES, SOCIETY OF AUTOMOTIVE ENGINEERS, WARRENDAL, PA, US, vol. SP-2154, no. 2008-01-1027, 14 April 2008 (2008-04-14), pages 1 - 8, XP002515826, ISSN: 0148-7191

## Cited by

CN105675499A; FR2993924A1; FR2993603A1; EP2662549A1; US2014224453A1; US9791216B2; CN104769241A; EP2914821A4; CN113420186A; FR2987073A1; FR2992726A1; CN104540781A; US2015160078A1; EP2631445A1; FR2987075A1; FR2991379A1; US9393523B2; WO2014070246A1; WO2014070247A1; WO2014001733A1

## Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK SM TR

## Designated extension state (EPC)

AL BA RS

## DOCDB simple family (publication)

**EP 2361883 A1 20110831**; BR 112012021076 A2 20160517; CN 102781835 A 20121114; EP 2539277 A2 20130102; EP 2539277 B1 20161221; JP 2013520386 A 20130606; US 2013209316 A1 20130815; US 8834603 B2 20140916; WO 2011103968 A2 20110901; WO 2011103968 A3 20111124

## DOCDB simple family (application)

**EP 10001955 A 20100225**; BR 112012021076 A 20110214; CN 201180011202 A 20110214; EP 11705811 A 20110214; EP 2011000674 W 20110214; JP 2012554242 A 20110214; US 201113579375 A 20110214